

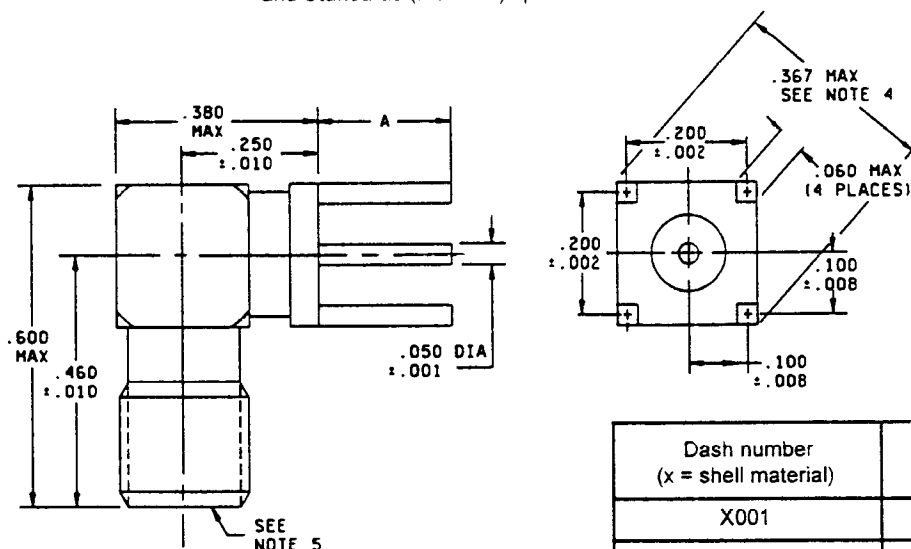
NOTE: The document identifier and heading has been changed on this page to reflect that this is a performance specification. There are no other changes to this document. The document identifier on subsequent pages has not been changed, but will be changed the next time this document is revised.

PERFORMANCE SPECIFICATION

CONNECTORS, RECEPTACLES, ELECTRICAL, COAXIAL, RADIO FREQUENCY, SERIES SMA, (UNCABLED, FEMALE, PRINTED CIRCUIT, RIGHT ANGLE, CLASS 2)

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-PRF-39012.



Dash number (x = shell material)	Dimension A inches (mm in parentheses)
X001	.155 (3.94) ±.010 (0.25)
X002	.125 (3.18) ±.010 (0.25)
X003	.093 (2.36) ±.010 (0.25)

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.001	0.02	.058	1.27	.250	6.35	.600	15.24
.002	0.05	.060	1.52	.367	9.32		
.008	0.20	.100	2.54	.380	9.65		
.010	0.25	.200	5.08	.460	11.68		

NOTES:

- Dimensions are in inches.
- Metric equivalents are given for general information only.
- All undimensioned pictorial configurations are for reference purposes only.
- Configuration optional.
- Series SMA, socket contact interface in accordance with MIL-STD-348.
- All corrosion resistant steel bodied connectors shall be gold plated in accordance with MIL-G-45204, type II, class I.

FIGURE 1. General configuration.

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ENGINEERING DATA:

Nominal impedance: 50 ohms.

Frequency range: 0 to 18 GHz.

Voltage rating: 335 volts rms maximum at sea level; 85 volts rms maximum at 70,000 feet.

Temperature rating: -65°C to +105°C.

REQUIREMENTS:

Dimensions and configuration: See figure 1 and MIL-STD-348.

Force to engage and disengage:

Longitudinal force: Not applicable.

Torque: 2 inch-pounds maximum.

Coupling proof torque: Not applicable.

Inspection conditions: For each test of threaded coupling connector where the test is performed on mated pairs, the pairs shall be torqued to 7 to 10 inch-pounds.

Mating characteristics: See MIL-STD-348 for dimensions.

Center contact (female):

Oversize test pin: .0375 +.0001/-.0000 inch.

Test pin finish: 16 microinches.

Insertion depth: .030/.045 inch.

Number of insertions: 3.

Insertion force test:

Steel test pin diameter: .0370 +.0001/-.0000 inch.

Insertion depth: .050/.075 inch.

Test pin finish: 16 microinches.

Insertion force: 2 pounds maximum.

Withdrawal force test:

Steel test pin diameter: .0355 +.0000/-.0001 inch.

Insertion depth: .050/.075 inch.

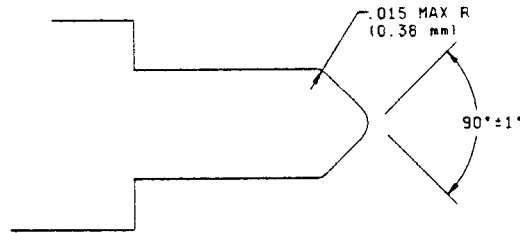
Test pin finish: 16 microinches.

Withdrawal force: 1 ounce minimum.

Hermetic seal: Not applicable.

Leakage (pressurized connectors): Not applicable.

Insulation resistance: Method 302, test condition B, MIL-STD-202; 5,000 megohms minimum.

FIGURE 2. Test pin data.

Center contact retention:

Axial force: 6.0 pounds minimum.

Radial torque: 4 inch-ounces minimum.

Solderability 1/: Method 208 of MIL-STD-202.

Corrosion (salt spray): Method 101, test condition B, MIL-STD-202.

Voltage standing wave ratio (VSWR): Not applicable.

Connector durability: Insertion and withdrawal force: 500 cycles minimum at 12 cycles per minute maximum. The connector shall meet mating characteristics and force to engage and disengage requirements.

Contact resistance (in millionhms maximum):

	<u>Initial</u>	<u>After environment</u>
Center contact:	3.0	4.0
Outer contact:	2.0	Not applicable

Dielectric withstanding voltage at sea level: Method 301 of MIL-STD-202: 1,000 volts rms.

Vibration, high frequency: Method 204, test condition D, MIL-STD-202.

Shock (specified pulse): Method 213, test condition 1, MIL-STD-202.

Thermal shock: Method 107, test condition B, MIL-STD-202 except test high temperature shall be +125°C.

Moisture resistance: Method 106 of MIL-STD-202. No measurements at high humidity. Insulation resistance shall be at least 200 megohms within 5 minutes after removal from humidity.

1/ For quality conformance inspection, the test shall be performed in group B following the insulation resistance test.

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Corona level:

Voltage: 250 volts minimum.

Altitude: 70,000 feet.

RF high potential withstanding voltage:

Voltage and frequency: 670 volts rms at 5 MHz.

Leakage current: Not applicable.

Cable retention force: Not applicable.

Coupling mechanism retention force: Not applicable.

RF leakage: Not applicable.

Insertion loss: Not applicable.

Group qualification: See table I.

Part or Identifying Number (PIN): M39012/94- (dash number from figure 1) (see note below).

NOTE: The center conductor terminal and the mounting legs may be tinned by the manufacturer, if requested by an OEM. The type of tinning and any related tests may be specified by the OEM. The tinning operation shall not cause the connectors to otherwise fail these specification requirements. The parts are to be marked with the original PIN's in effect prior to the tinning operation. Tinned parts are for the OEM's immediate use only and should not be stocked and issued by the Government for replacement purposes.

TABLE I. Group qualification and retention testing.

Group	Submission and qualification of any of the following connectors	Qualifies the following connectors
I	M39012/94-X001 M39012/94-X002 M39012/94-X003	M39012/94-X001 M39012/94-X002 M39012/94-X003

X = Material.

NOTE: If a connector manufacturer produces a connector which meets all the requirements for two or more connector types (within the same series), the manufacturer may receive qualification approval for the two or more connector types by qualifying the one connector. It is not necessary that such connectors be in the same group. Each connector, however, must be marked with its own appropriate PIN.

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Revision letters are not used to denote changes due to the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - EC
Air Force - 85

Preparing activity:

DLA - ES

(Project 5935-3911-05)

Review activities:

Army - AM, AT, ME, MI
Navy - AS, MC, OS, SH
Air Force - 19, 99